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ABSTRACT

This question and answer guide provides an overview of the research on the origins and pathways of drug abuse, the basic principles derived from effective drug abuse prevention research, and the application of research results to the prevention of drug use among young people. The basic principles derived from drug abuse prevention research are described in simple direct terms so that they can be applied to successfully prevent drug use among young people. Topics covered include: (1) "Risk and Protective Factors"; (2) "Drug Abuse Prevention in the Community"; (3) "Some Research-Based Drug Abuse Prevention Programs"; (4) "Selected Resources and References." Topics are presented in question and answer format with checklists of prevention principles that apply in particular arenas. Ten prevention programs are described briefly with references for further information; each program is characterized as "universal," "selective," or "indicated." (EMK)

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Preventing Drug Use Among Children and Adolescents

A Research-Based Guide

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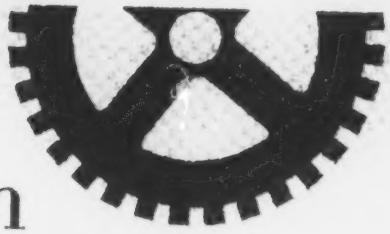

Prevention Principles

FOR CHILDREN AND ADOLESCENTS

Prevention programs should be designed to enhance "protective factors" and move toward reversing or reducing known "risk factors."

Prevention programs should target all forms of drug abuse, including the use of tobacco, alcohol, marijuana, and inhalants.

Prevention programs should include skills to resist drugs when offered, strengthen personal commitments against drug use, and increase social competency (e.g., in communications, peer relationships, self-efficacy, and assertiveness), in conjunction with reinforcement of attitudes against drug use.

Prevention programs for adolescents should include interactive methods, such as peer discussion groups, rather than didactic teaching techniques alone.

Prevention programs should include a parents' or caregivers' component that reinforces what the children are learning—such as facts about drugs and their harmful effects—and that opens opportunities for family discussions about use of legal and illegal substances and family policies about their use.

Prevention programs should be long-term, over the school career with repeat interventions to reinforce the original prevention goals. For example, school-based efforts directed at elementary and middle school students should include booster sessions to help with critical transitions from middle to high school.

Family-focused prevention efforts have a greater impact than strategies that focus on parents only or children only.

Community programs that include media campaigns and policy changes, such as new regulations that restrict access to alcohol, tobacco, or other drugs, are more effective when they are accompanied by school and family interventions.

Community programs need to strengthen norms against drug use in all drug abuse prevention settings, including the family, the school, and the community.

Schools offer opportunities to reach all populations and also serve as important settings for specific subpopulations at risk for drug abuse, such as children with behavior problems or learning disabilities and those who are potential dropouts.

Prevention programming should be adapted to address the specific nature of the drug abuse problem in the local community.

The higher the level of risk of the target population, the more intensive the prevention effort must be and the earlier it must begin.

Prevention programs should be age-specific, developmentally appropriate, and culturally sensitive.

Effective prevention programs are cost-effective. For every dollar spent on drug use prevention, communities can save 4 to 5 dollars in costs for drug abuse treatment and counseling.

Preventing Drug Use Among Children and Adolescents

A Research-Based Guide

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Preface

SINCE 1991, DRUG USE HAS BEEN INCREASING among America's youth. To counter these trends, we must strengthen drug abuse prevention efforts at the Federal, State, and local levels. Unlike the late 1970s when drug use reached its peak, today we are in a unique position to intervene effectively by applying the results of more than 20 years of prevention research.

This research has helped identify the important factors that put young people at risk for or protect them from drug use. Intervention researchers have studied the effectiveness of various prevention approaches by using rigorous research designs and testing and implementing effective drug abuse prevention interventions in "real-world" settings. Now it is possible to describe the basic principles derived from drug abuse prevention research in simple direct terms so that they can be applied to successfully prevent drug use among young people.

To assist people working in prevention from communities across the country, NIDA sponsored the National Conference on Drug Abuse Prevention Research: Putting Research to Work for the Community in September 1996 and produced this guide. The guide provides an overview of the knowledge gleaned from NIDA's prevention research and answers questions from community members on how these findings can be used to address local drug abuse problems.

We hope this information will help community leaders take the first steps in assessing their local drug abuse problems and developing comprehensive, effective drug abuse prevention strategies that **can** make a difference.

Alan I. Leshner, Ph.D.
DIRECTOR
NATIONAL INSTITUTE ON DRUG ABUSE

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Introduction

THIS GUIDE IS DESIGNED TO PROVIDE important research-based concepts and information to further efforts to develop and carry out effective drug abuse prevention programs. The question-and-answer format was the result of a collaboration involving NIDA staff, drug abuse prevention leaders, and NIDA-supported prevention scientists. Specific questions were solicited from State and local drug abuse prevention practitioners and key leaders in national prevention organizations. The answers were developed in consultation with prevention scientists. This question-and-answer guide presents an overview of the research on the origins and pathways of drug abuse, the basic principles derived from effective drug abuse prevention research, and the application of research results to the prevention of drug use among young people.

Risk and Protective Factors

Q: What are risk factors and protective factors?

Studies over the past two decades have tried to determine the origins and pathways of drug abuse—how the problem starts and how it progresses. Several factors have been identified that differentiate those who use drugs from those who do not. Factors associated with greater potential for drug use are called "risk" factors, and those associated with reduced potential for such use are called "protective" factors.

Risk and protective factors encompass psychological, behavioral, family, and social characteristics.

Our research has revealed that there are many risk factors for drug abuse, each representing a challenge to the psychological and social development of an individual and each having a differential impact depending on the phase of development. For this reason, those factors that affect early development in the family are probably the most crucial, such as:

- chaotic home environments, particularly in which parents abuse substances or suffer from mental illnesses;
- ineffective parenting, especially with children with difficult temperaments and conduct disorders; and
- lack of mutual attachments and nurturing.

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Other risk factors relate to children interacting with other socialization agents outside of the family, specifically the school, peers, and the community. Some of these factors are:

- inappropriate shy and aggressive behavior in the classroom;
- failure in school performance;
- poor social coping skills;
- affiliations with deviant peers or peers around deviant behaviors; and
- perceptions of approval of drug-using behaviors in the school, peer, and community environments.

Certain protective factors also have been identified. These factors are not always the opposite of risk factors. Their impact also varies along the developmental process. The most salient protective factors include:

- strong bonds with the family;
- experience of parental monitoring with clear rules of conduct within the family unit and involvement of parents in the lives of their children;
- success in school performance;
- strong bonds with prosocial institutions such as the family, school, and religious organizations; and
- adoption of conventional norms about drug use.

Other factors—such as the availability of drugs, trafficking patterns, and beliefs that drug use is generally tolerated—also influence the number of young people who start to use drugs.

Q: How can prevention planners use risk and protective factors to develop programs?

The study of factors and processes that increase the risk of using drugs or protect against the use of drugs has identified the following primary targets for prevention intervention: family relationships, peer relationships, the school environment, and the community environment. Some of the factors in each domain are briefly described below. Each of these domains can be a setting for deterring the initiation of drug use through increasing social- and self-competency skills, adoption of prosocial attitudes and behaviors, and awareness of the harmful health, social, and psychological consequences of drug abuse.

Prevention efforts can enhance protective factors and move toward reversing or reducing risk factors.

Family Relationships. Prevention programs can enhance protective factors among young children by teaching parents skills for better family communication, discipline, firm and consistent rulemaking, and other parenting skills. Research also has shown that parents need to take a more active role in their children's lives, including talking with them about drugs, monitoring their activities, getting to know their friends, and understanding their problems and personal concerns.

Peer Relationships. Prevention programs focus on an individual's relationship to peers by developing social-competency skills, which involve improved communications, enhancement of positive peer relationships and social behaviors, and resistance skills to refuse drug offers.

The School Environment. Prevention programs also focus on enhancing academic performance and strengthening students' bonding to school, by giving them a sense of identity and achievement and reducing the likelihood of their dropping out of school. Most curriculums include the support for positive peer relationships (described above) and a normative education component designed to correct the misperception that most students are using drugs. Research has found also that when children understand the negative effects of drugs (physical, psychological, and social) and when they perceive their friends' and families' social disapproval of drug use, they tend to avoid initiating drug use.

> "[You need] top-down and bottom-up support for prevention... You need support from every level including the mayor, the clergy, the education leaders, and citizens at all levels."
>
> A NATIONAL COALITION LEADER

The Community Environment. Prevention programs work at the community level with civic, religious, law enforcement, and governmental organizations to enhance antidrug norms and prosocial behavior through changes in policy or regulation, mass media efforts, and communitywide awareness programs. Community-based programs might include new laws and enforcement, advertising restrictions, and drug-free school zones—all designed to provide a cleaner, safer, drug-free environment.

Educating children about the negative effects of drugs, especially the most immediate adverse effects in their lives, is an important element in any prevention program. In addition, helping children become more successful in school behavior and performance helps them form strong prosocial bonds with their peers, the school, and the community.

Q: What are the highest-risk periods for drug use among youth?

For most children, research has shown that the vulnerable periods are transitions, when they grow from one developmental stage to another, or when they experience difficult life changes, such as moving or divorce. Exposure to risks can start even before a child is born; this is one reason that mothers are advised to abstain from drugs during pregnancy.

> "We need to know what recent surveys show and the implications for areas like ours. It would also be helpful if we had more up-to-date information about the effects of drugs on women and their offspring."
>
> A COMMUNITY LEADER

The first big transition for children is when they leave the security of the family and enter school. When they advance from elementary school to middle school or junior high, they often face social challenges, such as learning to get along with a wider group of peers. It is at this stage, early adolescence, that children are likely to encounter drug use for the first time.

Later on, when they enter high school, young people face social, psychological, and educational challenges as they prepare for the future, and these challenges can lead to use and abuse of alcohol, tobacco, and other drugs.

When young adults go on to college or get married or enter the workforce, they again face new risks from alcohol and other drug abuse in their new adult environments.

Because risks appear at every transition from infancy through young adulthood, prevention planners need to develop programs that provide support at each developmental stage.

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Q: When does drug use start, and how does it proceed?

Studies indicate that children most often begin to use drugs at about age 12 or 13, and many researchers have observed young teens moving from the illicit use of legal substances (such as tobacco, alcohol, and inhalants) to the use of illegal drugs (marijuana is usually the first). The sequence from tobacco and alcohol use to marijuana use, and then, as children get older, to other drugs, has been found in almost all long-term studies of drug use. The order of drug use in this progression is largely consistent with social attitudes and norms and the availability of drugs. But it cannot be said that smoking and drinking at young ages are the cause of later drug use.

Nor does this sequencing imply that the progression is inevitable. It does say that for someone who ever smoked or drank, the risk of moving on to marijuana is **65 times higher** than that for a person who never smoked or drank. The risk of moving on to cocaine is **104 times higher** for someone who smoked marijuana at least once in his or her lifetime than for a person who never did *(these figures are from an analysis of 1991–1993 data from the National Household Survey on Drug Abuse).*

Scientists have hypothesized several reasons for this observed progression, including a possible biological cause. The research also suggests social or behavioral causes, such as early involvement with antisocial, drug-using people. Indeed, all these possibilities could play a part.

Drug Abuse Prevention in the Community

Q: How can community leaders assess the level of risk for drug abuse in the community?

To assess the level of risk, it is important to:

- assess the extent of drug use and community awareness of the problem;
- gain an understanding of the community's culture and how that culture is affected by drug use;
- consult with community leaders working in drug abuse and related areas; and
- learn about efforts already under way to address the problem.

Then, a more formal process of identifying problems and assessing community needs can begin.

> "The most important elements in community prevention programs are strategies, tools, and information about drug abuse problems. What are the drugs? How are they used?"
>
> A NATIONAL COALITION LEADER

Many tools have been tested in research and can be used to assess the community's drug problem. For example, drug abuse epidemiologists have used:

- household and school surveys;
- methods to collect available information from health departments, hospitals, drug abuse treatment facilities, law enforcement agencies, and school systems;
- ethnographic studies, which use a systematic, observational process to describe behaviors in natural settings, such as urban heroin use, and also document the perspectives of the individuals under observation; and
- more informal methods, such as convening focus groups with representatives of drug-using subpopulations to determine what is going on in the community.

Each of these methods has advantages and disadvantages, so NIDA recommends, if resources allow, the use of multiple strategies to assess community risk to provide the best information possible. The information obtained in this early assessment can help community leaders make sound decisions about programs and policies and will contribute to later evaluation efforts.

Q: How can community leaders judge the effectiveness of current prevention efforts?

With the growing problem of adolescent drug use, shrinking resources, and limited expertise in evaluation, the task of assessing current program effectiveness and planning for future needs may appear daunting.

Many communities can undertake formal evaluations by working with their local universities to obtain help in developing and implementing well-designed evaluation strategies. These strategies try to track drug use among the young people who have been reached by the program and compare those results with drug use among a control group *(young people of similar characteristics who have not been involved with the program)*.

> "The major obstacle is the difficulty of demonstrating the benefits of prevention. People in the prevention field are always under a lot of pressure to show results."
>
> A STATE PREVENTION LEADER

Another approach is for communities to conduct a structured review of current prevention programs to determine, first, whether the programs in place were tested according to rigorous scientific standards during their development; and second, whether these incorporate the basic principles of prevention that have been identified in research.

The following checklist can assist in determining whether specific programs include research-based prevention principles:

Prevention Principles for Community Programs

- ✔ *To be comprehensive, does the program have components for the individual, the family, the school, the media, community organizations, and health providers? Are the program components well integrated in theme and content so that they reinforce each other?*
- ✔ *Does the prevention program use media and community education strategies to increase public awareness, attract community support, reinforce the school-based curriculum for students and parents, and keep the public informed of the program's progress?*
- ✔ *Can program components be coordinated with other community efforts to reinforce prevention messages (for instance, can training for all program components address coordinated goals and objectives)?*
- ✔ *Are interventions carefully designed to reach different populations at risk, and are they of sufficient duration to make a difference?*
- ✔ *Does the program follow a structured organizational plan that progresses from needs assessment through planning, implementation, and review to refinement, with feedback to and from the community at all stages?*
- ✔ *Are the objectives and activities specific, time-limited, feasible (given available resources), and integrated so that they work together across program components and can be used to evaluate program progress and outcomes?*

Prevention Principles for School-Based Programs

- ✔ *Do the school-based programs reach children from kindergarten through high school? If not, do they at least reach children during the critical middle school or junior high years?*
- ✔ *Do the programs contain multiple years of intervention (all through the middle school or junior high years)?*
- ✔ *Do the programs use a well-tested, standardized intervention with detailed lesson plans and student materials?*
- ✔ *Do the programs use age-appropriate interactive teaching methods (modeling, roleplaying, discussion, group feedback, reinforcement, extended practice)?*
- ✔ *Do the programs foster prosocial bonding to the school and community?*
- ✔ *Do the programs have these components:*
  - *teach social competence (communication, self-efficacy; assertiveness) and drug resistance skills that are culturally and developmentally appropriate;*
  - *promote positive peer influence;*
  - *promote antidrug social norms;*
  - *emphasize skills-training teaching methods; and*
  - *include an adequate "dosage" (10 to 15 sessions in year 1 and another 10 to 15 booster sessions)?*
- ✔ *To maximize benefits, do the programs retain core elements of the effective intervention design (see p. 16)?*
- ✔ *Is there periodic evaluation to determine whether the programs are effective?*

Prevention Principles for Family-Based Programs

- ✔ *Do the family-based programs reach families of children at each stage of development?*
- ✔ *Do the programs train parents in behavioral skills to:*
  - *reduce conduct problems in children;*
  - *improve parent-child relations, including positive reinforcement, listening and communication skills, and problemsolving;*
  - *provide consistent discipline and rulemaking; and*
  - *monitor children's activities during adolescence?*
- ✔ *Do the programs include an educational component for parents with drug information for them and their children?*
- ✔ *Are the programs directed to families whose children are in kindergarten through 12th grade to enhance protective factors?*
- ✔ *Do the programs provide access to counseling services for families at risk?*

Q: How can community leaders motivate the community to take action and implement new prevention programs?

> "We need to rebuild the parents movement... to get concerned parents involved again and give them the information needed... the most up-to-date information about what drugs do to people."
>
> A NATIONAL PREVENTION LEADER

Establishing a community coalition of key leaders from public- and private-sector organizations can provide the impetus for action. This coalition can hold communitywide meetings, develop a public education campaign, and attract sponsors for a comprehensive drug abuse prevention strategy.

Research has shown that programs can use the media to raise public awareness about the seriousness of a community's drug problem and help get drug abuse on the public agenda. Using local data and speakers from the community helps demonstrate that the drug problem is real and that action is needed.

Q: How can program planners be sure prevention strategies are in line with community needs?

Once the community is alerted to its drug problem, the community group needs to develop a comprehensive plan that links prevention strategies with the needs of the community.

The plan should include:

- assessment of the community problem;
- identification of the most important risks that can be addressed and/or protective factors that can be strengthened;
- resources identified to assist in further planning and implementation (see "Selected Resources" section); and
- designation of the key players and programs to be involved.

As part of the plan, decisions must be made about what additional services are needed for any programs already under way in the community. These can include more intensive law enforcement, new policies on alcohol and tobacco sales, school programs designed to alter attitudes about drug use, and interventions with parents who are drug users.

Q: How can a community take a promising model program and implement it effectively?

Recognizing that each community has unique qualities that must be addressed if prevention programs are to succeed, researchers have been building models that might be adapted to different circumstances and different populations. Several of the most tested models *(e.g., Life Skills, Strengthening Families, and Project STAR)* are currently being delivered as part of a research program in settings with minority populations and in rural and urban environments. Researchers are also testing how to shape these interventions to address those differences while maintaining the intervention's original effectiveness.

As these interventions are adapted to meet the community's needs, it is important to recognize that greater effectiveness is achieved when a program retains the core elements of the original research-based intervention, including its basic structure, content, and delivery. Some examples of these Core Elements are:

Structure–How the program is organized and constructed—e.g., the necessary number of sessions and boosters; critical age or description of the target audience (middle school students; parents);

Content–The most important informational and/or educational components of the program—e.g., inclusion of both peer refusal skills and social norm development in curricula; inclusion of family communications training in family programs; and

Delivery–How the program is given to and received by the audience—e.g., are teachers well trained to deliver the cirriculum with monitoring and assistance to maintain fidelity to the program's core elements; do family programs use the best approaches to recruit families at risk.

Q: How can evaluation help community leaders assess their own progress and the progress against the drug problem in the community?

Conducting evaluations of community prevention programs can be challenging and difficult. Many community leaders have consulted with local university faculty members and other evaluation experts to design evaluation procedures.

Some of the problems in evaluations result from errors in the evaluation design, so that the findings do not show a clear relationship between the program and the outcomes. Were the results truly

attributable to the program's effects and not some other source, such as other community events or the maturation of the target groups?

Some of the pitfalls of evaluation can be avoided by consulting with experts who can guide the evaluation design by:

- using tested data collection instruments;
- obtaining good baseline—"before intervention"—information;
- using control or comparison groups of people who did not receive the intervention but whose characteristics are similar to those of the people who did receive it;
- monitoring the quality of program implementation;
- making sure that postintervention followup includes a large percentage of the target population; and
- using appropriate statistical methods to analyze the data.

The evaluation process should answer all the questions:

- What was done in the program?
- How was the program carried out?
- Who participated in it?
- Was the program implemented as intended?
- Did the program achieve what was expected?
- Did the program produce the desired long-term effects?

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"Drug abuse is a preventable behavior. Drug addiction is a treatable disease."

Partnership for a Drug-Free America

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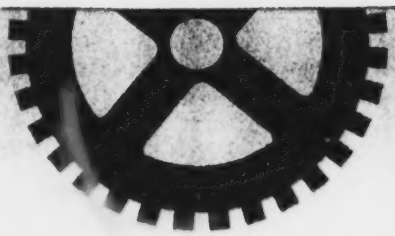

Some Research-Based Drug Abuse Prevention Programs

TO ASSIST PEOPLE WORKING IN PREVENTION, NIDA, in cooperation with the scientists who conducted the research, have prepared the following descriptions of some programs that have been studied scientifically. Each has been developed as part of a research protocol and tested in a family, school, or community setting over a reasonable period with positive results. These programs are categorized by a new series of definitions adopted in the prevention field, which describe the programs by the audience for which they are designed. Specifically, they are *universal programs*, *selective programs*, and *indicated programs*.

Universal programs reach the general population—*such as all students in a school.*

Selective programs target groups at risk or subsets of the general population—*such as children of drug users or poor school achievers.*

Indicated programs are designed for people who are already experimenting with drugs or who exhibit other risk-related behaviors.

Project STAR *(Pentz et al. 1989; Pentz 1995)* This is a **universal** drug abuse prevention program that reaches the entire community population with a comprehensive school program, mass media efforts, a parent program, community organization, and health policy change. The middle *school-based component* is a social influence curriculum that is incorporated in classroom instruction by trained teachers over a 2-year timetable. *Mass media* are used to promote, reinforce, and help maintain the project.

In the *parent program component,* parents work with their children on Project STAR homework, learn family communication skills, and get involved in community action. The *community organization component* is the essential formal body that organizes and oversees all project-related activities.

The *health policy change component* is implemented as a task of the community organization; the aim is to develop and implement policies that affect alcohol, tobacco, and other drug laws and other local policies, such as establishing and monitoring drug-free sites in the community.

Research results on this project have shown positive long-term effects: Students who began the program in junior high, and whose results were measured in their senior year of high school, showed significantly less use of marijuana (approximately 30 percent less), cigarettes (about 25 percent less), and alcohol (about 20 percent less) than children in schools that did not offer the program. The most important factor found to have affected drug use among the students was increased perceptions of their friends' intolerance of drug use.

Life Skills Training Program *(Botvin et al. 1990, 1995a,b)* The Life Skills Training **universal** classroom program is designed to address a wide range of risk and protective factors by teaching general personal and social skills in combination with drug resistance skills and normative education. The program consists of a 3-year prevention curriculum intended for middle school or junior high students. It contains 15 periods during the first year, 10 booster sessions during the second, and 5 sessions during the third. Three major content areas are covered by the Life Skills Training program: drug resistance skills and information, self-management skills, and general social skills.

Drug resistance skills and information provides material that deals directly with the social factors promoting drug use. This content area includes material designed to increase awareness of social influences toward drug use, correct the misperception that everyone is using drugs and promote antidrug norms, teach prevention-related information about drug abuse, and teach drug resistance skills.

The *self-management skills* content area provides students skills for increasing independence, personal control, and a sense of self-mastery. This includes teaching general problem-solving and decisionmaking skills, critical thinking skills for resisting peer and media influences, skills for increasing self-control and self-esteem (such as self-appraisal, goal-setting, self-monitoring, self-reinforcement), and adaptive coping strategies for relieving stress and anxiety.

General social skills enhance students' social competence with a variety of general social skills, including skills for communicating effectively, overcoming shyness, learning to meet new people, and developing healthy friendships. These skills are taught through a combination of instruction, demonstration, feedback, reinforcement, behavioral rehearsal, and extended practice through homework assignments.

The Life Skills Training program has been extensively studied over the past 16 years. Results indicate that this prevention approach can produce 59- to 75-percent lower levels

(relative to controls) of tobacco, alcohol, and marijuana use. Booster sessions can help maintain program effects. Long-term followup data from a randomized field trial involving nearly 6,000 students from 56 schools found significantly lower smoking, alcohol, and marijuana use 6 years after the initial baseline assessment. The prevalence of cigarette smoking, alcohol use, and marijuana use for the students who received the Life Skills Training program was 44 percent lower than for control students, and the regular (weekly) use of multiple drugs was 66 percent lower.

Although the early research with the Life Skills Training program was conducted with white populations, several recent studies show that it is also effective with inner-city minority youth. It also has been found effective when implemented under different scheduling formats and with different levels of project staff involvement. Finally, evaluation studies indicate that this prevention program works whether the program providers are adults or peer leaders.

Adolescent Alcohol Prevention Trial (AAPT) *(Donaldson et al. 1994)*

AAPT is a **universal** classroom program designed for fifth grade students, with booster sessions conducted in the seventh grade. It includes two primary strategies. *Resistance skills training* is designed to give children the social and behavioral skills they need to refuse explicit drug offers. *Normative education* is specifically designed to combat the influences of passive social pressures and social modeling effects. It focuses on correcting erroneous perceptions about the prevalence and acceptability of substance use and on establishing conservative group norms.

In the research design, the students received either *information about consequences of drug use* only, *resistance skills* only, *normative education* only, or *resistance skills* training in combination with *normative education.* Results showed that the combination of resistance skills training and normative education prevented drug use; resistance skills training alone was not sufficient.

Seattle Social Development Project *(Hawkins et al. 1992)* A **universal** program, the Seattle project is a school-based intervention for grades one through six that seeks to reduce shared childhood risks for delinquency and drug abuse by enhancing protective factors. The multicomponent intervention trains elementary school teachers to use active classroom management, interactive teaching strategies, and cooperative learning in their classrooms.

At the same time, as children progress from grades one through six, their parents are provided a training session called "How To Help Your Child Succeed in School," a family management skills training curriculum called "Catch 'Em Being Good," and the "Preparing for the Drug-Free Years" curriculum. The interventions are designed to enhance opportunities, skills, and rewards for children's prosocial involvement in both school and family settings, thereby increasing their bonds to school and family and commitment to the norm of not using drugs.

Long-term results indicate positive outcomes for students who participated in the program: reductions in antisocial behavior, improved academic skills, greater commitment to school, reduced levels of alienation and better bonding to prosocial others, less misbehavior in school, and fewer incidents of drug use in school.

Adolescents Training and Learning To Avoid Steroids: The ATLAS Program *(Goldberg et al. 1996a,b)* ATLAS is a multicomponent **universal** program for male high school athletes, designed to reduce risk factors for use of anabolic steroids and other drugs while providing healthy sports nutrition and strength-training alternatives to illicit use of athletic-enhancing substances. Coaches and peer teammates facilitate curriculum delivery with scripted manuals in small cooperative learning groups, taking advantage of an influential coaching staff and the team atmosphere where peers share common goals.

The seven 45-minute classroom sessions and seven physical training periods involve roleplaying, student-created campaigns, and educational games. Instructional aids include

pocket-sized food and exercise guides and easy-to-follow student workbooks. Parents are involved with parent-student homework and with the booklet "Family Guide to Sports Nutrition."

The program features learning about anabolic steroids and other drugs, skills to resist drug offers, team ethics and drug-free commitment, drug use norms, vulnerability to drug effects, debunking media images that promote substance abuse; parent, coach, and team intolerance of drug use; and goal-setting for sports nutrition and exercise. Weight-lifting instruction at the school promotes safe training practices, reduces the influence of commercial gyms (where anabolic steroids and other drugs are more available), and highlights curriculum components.

Student athletes receiving the ATLAS program report better understanding of the effects of anabolic steroids and other drugs, greater belief in personal vulnerability to the adverse effects of anabolic steroids, and more certainty that their parents and coaches are intolerant of drug use. In addition, improved drug refusal skills, less belief in steroid-promoting media images, more confidence in personal ability to build muscle and strength without steroids, greater self-esteem, and less desire to use anabolic steroids were found among members of the intervention group. Importantly, these high school athletes continued to resist the temptation to use anabolic steroids and maintained better nutrition and exercise behaviors 1 year after the intervention. The program contains four booster sessions for each subsequent year of high school.

Project Family *(Spoth, in press)* Project Family is a series of interrelated investigations with the following goals: (1) evaluating universal family and youth competency- training interventions to examine the process of positive change in families; (2) testing the factors influencing parent participation in family programs: and (3) conducting statewide needs assessment surveys to determine family and community needs throughout Iowa. The prevention interventions evaluated through Project Family are **Preparing for the**

Drug-Free Years (PDFY), developed at the University of Washington, and the **Iowa Strengthening Families Program** (ISFP), a revision of the University of Utah Strengthening Families program, discussed below. The PDFY has five competency-training sessions for parents; one of these sessions is attended by young adolescents and parents together. The ISFP has seven sessions, each attended jointly by youth and their parents. The Iowa State University Cooperative Extension Service has been instrumental in the implementation and evaluation of both programs; it also aided in the adaptation of project methods for Native American populations.

Comparisons of both interventions with control group families show positive effects on parents' child management practices (for example, standard-setting, monitoring, discipline) and on parent-child affective quality. In addition, a recent evaluation of ISFP youth outcomes at the 1-year followup shows improved youth resistance to peer pressure toward alcohol use, reduced affiliation with antisocial peers, and reduced levels of problem behaviors. Importantly, intervention posttest outcome models demonstrate that positive parenting effects were significantly associated with reductions in children's problem behaviors. Study results are guiding efforts to evaluate whether addition of a family intervention to a school intervention is significantly better than use of a school intervention alone.

The second component of the research project studied the most effective ways of recruiting family participation. Findings highlight the importance of a number of practical recruitment and retention strategies, such as flexibility in intervention scheduling, minimizing initial time commitments, contacts from parents' peers, and multiple incentives (such as free food coupons, refreshments, and child care).

The statewide surveys assessed the prevalence of risk factors, protective factors, and substance-related problems, which have been utilized for health planning purposes.

Strengthening Families Program *(Kumpfer et al. 1996)* Strengthening Families is a **selective** multicomponent, family-focused program that provides prevention programming for 6- to 10-year-old children of substance abusers. The program began as an effort to help substance-abusing parents improve their parenting skills and reduce their children's risk factors. The program has been culturally modified and found effective (through independent evaluation) with African-American, Asian/Pacific Islander, and Hispanic families.

The Strengthening Families program contains three elements: a *parent training* program, a *children's skills training* program, and a *family skills training* program. In each of the 14 weekly sessions, parents and children are trained separately in the first hour. During the second hour, parents and children come together in the family skills training portion. Afterward, the families share dinner and a film or other entertainment.

Parent training improves parenting skills and reduces substance abuse by parents. *Children's skills training* decreases children's negative behaviors and increases their socially acceptable behaviors through work with a program therapist. *Family skills training* improves the family environment by involving both generations in learning and practicing their new behaviors.

This intervention approach has been evaluated in a variety of settings and with several racial and ethnic groups. The primary outcomes of the program include reductions in family conflict, improvement in family communication and organization, and reductions in youth conduct disorders, aggressiveness, and substance abuse.

Focus on Families *(Catalano et al., in press)* A **selective** program for parents receiving methadone treatment and for their children, Focus on Families has a primary goal to reduce parents' use of illegal drugs by teaching them skills for relapse prevention and coping. Parents are also taught how to manage their families better. The parent training consists of a 5-hour family retreat and 32 parent

training sessions of 1.5 hours each. Children attend 12 of the sessions to practice developmentally appropriate skills with their parents.

Session topics include family goal-setting, relapse prevention, family communication, family management, creating family expectations about alcohol and other drugs, teaching children skills (such as problemsolving and resisting drug offers), and helping children succeed in school. Booster sessions and case-management services also are provided.

Early results indicate that parents' drug use is dramatically lower and parenting skills significantly better than are seen in control groups; the program's effects on children have not yet been assessed, however.

Reconnecting Youth Program *(Eggert et al. 1994, 1995)* Reconnecting Youth is a school-based **indicated** prevention program that targets young people in grades 9 through 12 who show signs of poor school achievement and potential for dropping out of high school. They also may show signs of multiple problem behaviors (such as substance abuse, depression, and suicidal ideation). The program teaches skills to build resiliency with respect to risk factors and to moderate the early signs of substance abuse.

To enter the program, students must have fewer than the average number of credits earned for their grade level, have high absenteeism, and show a significant drop in grades. Or a youth may enter the program if he or she has a record of dropping out or has been referred as a significant dropout risk.

The program incorporates social support and life skills training with the following components:

- Personal Growth Class, a semester-long, daily class designed to enhance self-esteem, decisionmaking, personal control, and interpersonal communication;
- Social Activities and School Bonding, to establish drug-free social activities and friendships, as well as improving a teenager's relationship to school; and

- School System Crisis Response Plan, for addressing suicide prevention approaches.

Research shows that this program improves school performance; reduces drug involvement; decreases deviant peer bonding; increases self-esteem, personal control, school bonding, and social support; and decreases depression, anger and aggression, hopelessness, stress, and suicidal behaviors. Further analysis indicates that the support of Personal Growth Class teachers contributes to decreases in drug involvement and suicide risk behaviors.

Adolescent Transitions Program (ATP) *(Dishion et al., in press)* The ATP is a school-based program that focuses on parenting practices and integrates the **universal, selective,** and **indicated** approaches for middle and junior high school interventions within a comprehensive framework. The *universal* level of the ATP strategy, directed to the parents of all students in a school, establishes a Family Resource Room. The goal, through collaboration with the school staff, is to engage parents, establish norms for parenting practices, and disseminate information about risks for problem behavior and substance use. The videotape "Parenting in the Teenage Years" helps parents identify observable risk factors and focuses on the use of effective and ineffective family management skills, including positive reinforcement, monitoring, limit-setting, and relationship skills to facilitate evaluation of levels and areas of risk.

The *selective* level of intervention, the Family Check- Up, offers family assessment and professional support to identify those families at risk for problem behavior and substance use. The *indicated* level, the Parent Focus curriculum, provides direct professional support to parents for making the changes indicated by the Family Check-Up. Services may include behavioral family therapy, parenting groups, or case management services. Following this tiered strategy, a family in the indicated parenting intervention would have participated in a Family Check-Up and

received information from the school's Family Resource Room about risk factors for early substance use and parenting practices that reduce the risk of drug use for their children.

This program is based on a series of intervention trials, which comprise the Parent Focus curriculum and other intervention strategies, including working with high-risk teens in groups (Teen Focus curriculum) and directed strategies involving videotapes and newsletters. The findings from these studies indicate that parent interventions are needed for youth at high risk to reduce escalation of drug use, and repeated booster sessions are needed throughout the period of risk. These interventions were especially important because it was found that youth at high risk should not be placed together in groups because it can worsen problem behaviors including those related to school and drug use.

Selected Resources and References

For information on National Institute on Drug Abuse (NIDA) research:

Visit NIDA's home page on the World Wide Web at *http://www.nida.nih.gov.* To learn more about prevention research, click on the Division of Epidemiology and Prevention Research. For information on community-based data from the Community Epidemiology Work Group, click on CEWG. For PREVLINE information from the National Clearinghouse for Alcohol and Drug Information home page, go to *http://www.health.org.*

For information on National Institute on Alcohol Abuse and Alcoholism (NIAAA) research:

Visit NIAAA's home page on the World Wide Web at *http://www.niaaa.nih.gov.* Full text of many NIAAA publications is available, as well as program announcements identifying research priorities and NIAAA's online bibliographic database, which contains approximately 100,000 records.

For NIDA publications and prevention materials:

National Clearinghouse for Alcohol and Drug Information (NCADI)
P.O. Box 2345
Rockville, MD 20847-2345
(800) 729-6686

New NIDA materials on prevention:

All new publications are announced in *NIDA Notes*, NIDA's newsletter to the field. To get on the mailing list, write to:
Subscription Department, *NIDA Notes*
c/o R.O.W. Sciences, Inc.
1700 Research Boulevard, Suite 400
Rockville, MD 20850
or fax your subscription request to (301) 294-5401.

Drug Abuse Prevention Research Dissemination and Application Package:

The Drug Abuse Prevention Package, to be available in spring 1997, is designed to help prevention practitioners plan and implement more effective programs by applying the results of prevention research. The core package should be ordered and read first, as it provides the information needed to begin community planning. The stand-alone manuals can provide guidance for implementing a specific prevention strategy.

Core Package (4 publications)

NCADI Publication No. PREVPK

- *Brochure*
- *Drug Abuse Prevention: What Works*
- *Community Readiness for Drug Abuse Prevention: Issues, Tips, and Tools*
- *Drug Abuse Prevention and Community Readiness Training Facilitator's Manual*

Prevention Resource Manuals

Drug Abuse Prevention for the General Population, NCADI No. BKD200
Drug Abuse Prevention for At-Risk Groups, NCADI No. BKD201
Drug Abuse Prevention for At-Risk Individuals, NCADI No. BKD202

FOR INFORMATION ON NIDA'S PREVENTION AND EPIDEMIOLOGY RESEARCH, CONTACT:

National Institute on Drug Abuse
Division of Epidemiology and Prevention Research
5600 Fishers Lane, Room 9A-53
Rockville, MD 20857
(301) 443-1514; (301) 443-6504

FOR INFORMATION ON NIAAA'S PREVENTION RESEARCH PROJECTS AND PRIORITIES, CONTACT:

National Institute on Alcohol Abuse and Alcoholism
Division of Clinical and Prevention Research
Prevention Research Branch
6000 Executive Boulevard
Rockville, MD 20892
(301) 443-1677

FOR INFORMATION ON THE PROGRAMS AND PRIORITIES OF THE CENTER FOR SUBSTANCE ABUSE PREVENTION (CSAP), CONTACT:

Center for Substance Abuse Prevention
Division of Community Education
5600 Fishers Lane
Rockwall II, Suite 800
Rockville, MD 20857
(301) 443-0373

TO LEARN MORE ABOUT IMPLEMENTING SPECIFIC PREVENTION RESEARCH PROJECTS, CONTACT:

Gilbert J. Botvin, Ph.D. *(Life Skills Training)*
Institute for Prevention Research
Cornell University Medical Center
411 East 69th Street, Room KB201
New York, NY 10021
(212) 746-1270

Or, to order, contact:
Princeton Health Press, Inc.
115 Wall Street
Princeton, NJ 08540
(800) 636-3415; fax (609) 921-3593
E-mail: PHPinfo@aol.com

Thomas J. Dishion, Ph.D. *(Adolescent Transitions)*
Oregon Social Learning Center, Inc.
207 East Fifth Avenue, Suite 202
Eugene, OR 97401
(541) 485-2711

Leona L. Eggert, Ph.D., R.N. *(Reconnecting Youth)*
Psychosocial and Community
Health Department, Box 357263
University of Washington School of Nursing
Seattle, WA 98195-7263
(206) 543-9455

Or, to order, contact:
National Educational Service
P.O. Box 8
Bloomington, IN 47402
(800) 733-6786; fax (812) 336-7790
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Iowa State University of Science and Technology
Ames, IA 50010
(515) 294-9752

Other NIDA Prevention Research Grants

Center for Education and Drug Abuse Prevention Research (CEDAR)
Ralph E. Tarter, Ph.D.
Western Psychiatric Institute and Clinic
3811 O'Hara Street
Pittsburgh, PA 15213
(412) 624-1070

Center for Prevention Research
Richard R. Clayton, Ph.D.
1151 Red Mile Road, Suite 1A
Lexington, KY 40504
(606) 257-5588

Center of Alcohol Studies
Robert J. Pandina, Ph.D.
Rutgers University
P.O. Box 969
Piscataway, NJ 08855-0969
(908) 445-2686

Drug Abuse Prevention Research Center
Linda M. Collins, Ph.D.
Center for the Study of Prevention
Through Innovative Methodology
Pennsylvania State University
S. 159 Henderson Building
University Park, PA 16802
(814) 865-3253

Minority Adolescent Drug Use Prevention
Richard I. Evans, Ph.D.
Social Psychology and Behavioral
Medicine Research Group
Department of Psychology
University of Houston
Houston, TX 77204-5341
(713) 743-8555

MultiEthnic Drug Abuse Prevention Research Center
Gilbert J. Botvin, Ph.D.
Cornell University Medical Center
411 East 69th Street, Room KB201
New York, NY 10021
(212) 746-1270

Tri-Ethnic Center for Prevention Research
Eugene R. Oetting, Ph.D.
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Colorado State University
Fort Collins, CO 80523
(970) 491-1615

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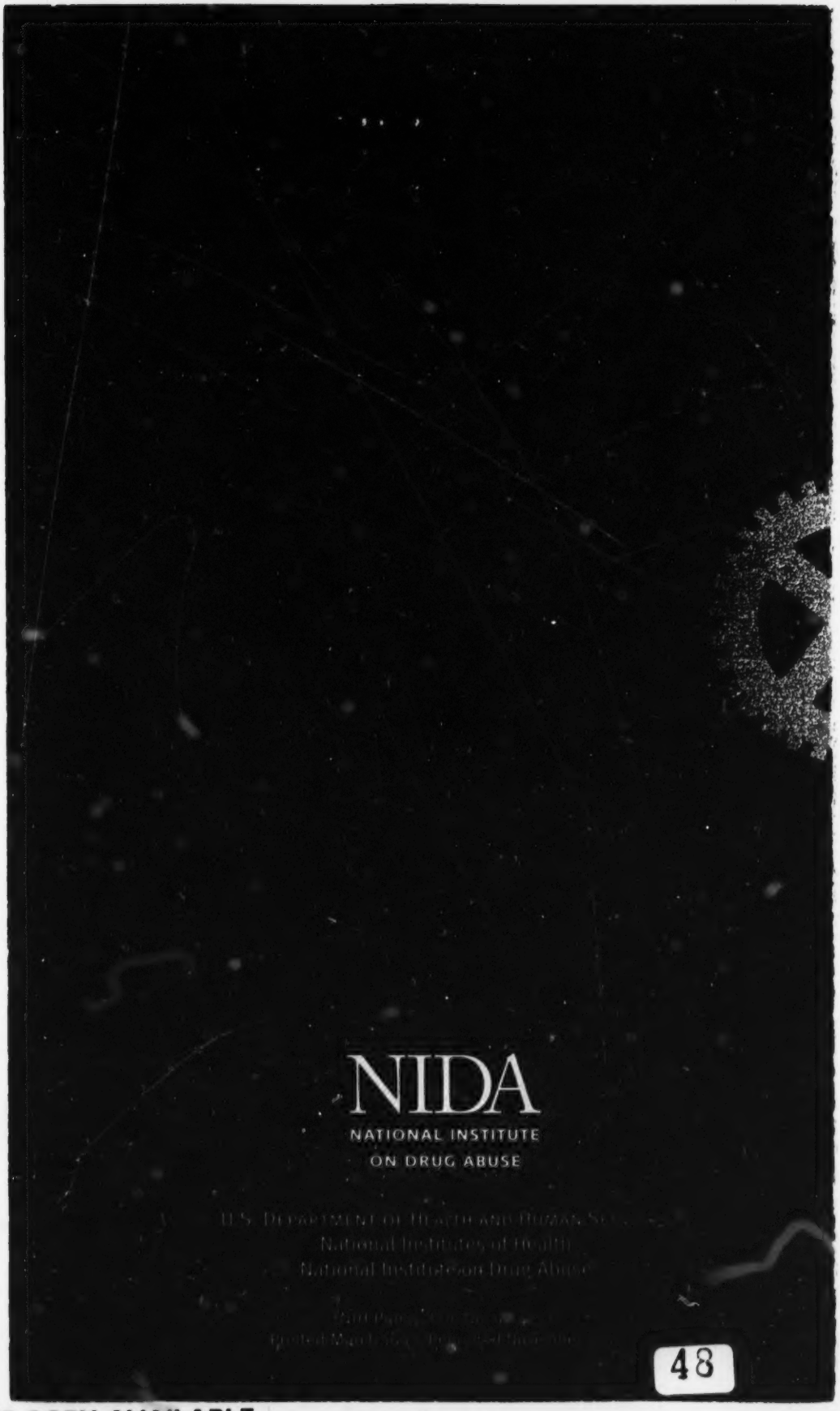

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